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Abstract

Introduction

Secondary schools are an important setting for preventing obesity in adolescence. Headteachers and chairs of governors are identified in national guidance as crucial stakeholders for school-based preventative action. Despite this, their views remain unexplored and unrepresented.

Methods

A sequential mixed method study was conducted. Semi-structured interviews were undertaken with a purposive sample of 22 secondary school headteachers and chairs of governors in England. Data was thematically analysed and informed the development of a descriptive cross-sectional survey, completed by 127 participants from the same population.

Results

Unhealthy dietary and sedentary behaviours were viewed as a more significant problem than adolescent obesity. Obesity was perceived as complex and multi-causal, and a range of stakeholders were deemed to have responsibility for its prevention, most notably parents.. Support was identified for the role of secondary schools, although this was not an explicit priority and extensive internal and external barriers exist which hinder preventative action.

Conclusions

Whilst secondary school settings in England remain an important setting for the prevention of adolescent obesity, it is crucial for policy makers and public health professionals to recognise the factors affecting school leaders' ability and willingness to contribute to this agenda.

Headteachers' and chairs of governors' perspectives on adolescent obesity and its prevention in English secondary school settings

Introduction

The escalating scale and severity of childhood and adolescent obesity globally and nationally presents a serious public health challenge in the 21st century (1). In England, over a fifth of four to five year-olds and over a third aged ten to eleven years are overweight or obese (2) with prevalence rising throughout adolescence (3). Whilst the rate of increase in obesity in early childhood may be stabilising in the UK (4), levels within childhood and adolescence remain *"historically high"* and inequalities in prevalence continue to grow (3,5,6).

The causes of obesity are complex and multifactorial, with genetic, behavioural and environmental factors all influencing an individual's weight (7). Obesity presents immediate and long term risks to physical, emotional and social health and well-being (8–11). Unless effectively addressed, obesity established in childhood and adolescence tracks throughout life (8,9,12–14). This increases the risk of preventable morbidity and premature mortality during adulthood (12). Prevention is perceived as the most effective solution to addressing obesity (1,5,15), as treatment can be challenging, complex and costly, with substantial variation in long-term benefits evidenced (11,15,16). Approaches to prevention aim to modify dietary and physical activity behaviours, by influencing the social and environmental determinants of obesity and supporting individual behaviour change within family, community and school settings (5,14,15,17–20).

Literature and national guidance have proposed that both primary and secondary schools are powerful settings for positively shaping child and adolescent health behaviours and therefore preventing obesity (6,13,20–25). Changes to a school's curriculum, environment and wider community engagement have been consistently evidenced to influence pupils' lifestyle behaviours and contribute to the prevention of obesity (19,24,26,27). Despite this, academic literature focusing exclusively on obesity prevention within secondary schools is scant (19,23,26–28). Adolescence is argued to be a critical time for developing or intensifying non-communicable disease risks, including obesity, inactivity and poor diet (29–31). Consequently, secondary schools remain an important setting for preventing obesity and influencing the lifestyle behaviours of 11-16 year olds across the demographic spectrum (32,33).

A significant factor determining the effectiveness of school-based preventative action, is the role of school headteachers and chairs of governors (22,34–38). Both roles are identified by the National Institute of Health and Care Excellence as pivotal in influencing whether and how obesity prevention policies and interventions are implemented in schools (22).Whilst a small evidence base has explored the views of primary school head teachers in England regarding childhood obesity and its prevention

(38,39), a substantial gap in the literature exists related to school governors and secondary school headteachers. The primary aim of this study therefore was to explore secondary school headteachers' and chairs of governors' perspectives about adolescent obesity and its prevention in secondary school settings.

Methods

The study used a mixed method sequential exploratory design (40), a two-phase design, which commences with a core qualitative phase and leads onto a second supplementary quantitative phase. Given the paucity of literature, exploratory semi-structured interviews were conducted in the qualitative phase, with the resultant findings informing the content of a descriptive cross-sectional survey utilised for the quantitative phase. This approach assisted in confirming whether perspectives obtained in the qualitative phase had relevance within a larger sample.

Eligibility criteria for both study phases were: (i) Secondary school headteacher or chairs of governors, (ii) currently employed (headteacher) or elected (chair of governors) during the data collection period, (iii) representing a secondary school in England providing education for 11-16 year olds.

Ethics approval

The study was authorised by the School of Health and Related Research (The University of Sheffield) Research Ethics Committee (006808)

Phase one - Qualitative

Recruitment

Using contact information from the Edubase2 register (41), an email including a summary of the intended research, participant information sheet and consent form, was sent to the generic email address of all schools in the West Midlands and Yorkshire and the Humber. These regions were selected based on the researcher's location and the aim to recruit participants from a large diverse pool of secondary schools in England. As the direct contact information of potential participants was

not publically available, each invitation email included a forwarding request to the school's respective headteacher and chair of governors.

Data collection

Semi-structured face to face interviews were conducted by a single researcher (EB) and guided by an interview schedule. The interview schedule comprised a mixture of closed questions (i.e. participant and school demographic information) and open questions, which aimed to explore participant's perspectives on –

- The prevalence, causes, consequences and impact of adolescent obesity
- Roles and responsibilities related to obesity prevention
- A secondary schools contribution to preventing adolescent obesity

According to their preference, interviews were held at a participant's school or in a public location. The interviews were audio-recorded, with participants' informed consent. Interviews were undertaken until the data obtained was deemed to be saturated (42,43).

Data analysis

Audio-recordings were transcribed verbatim, with identifying information removed. An inductive thematic analysis identified the main themes without the application of any pre-existing analytical structure (44). Transcripts were examined word by word and coded electronically in NVivo 11 (45). To enhance trustworthiness (46) of analysis, a proportion of coded transcripts were reviewed by two independent researchers (VH and RC), and resultant themes and sub-themes critically discussed until consensus was achieved.

<u>Phase 2 - Quantitative</u>

Recruitment

Invitations for headteachers and chairs of governors to complete an online questionnaire were sent to all state and non-state funded secondary schools in England (4,616 at point of data collection). School websites and generic email addresses for all schools were obtained from the Department for

Education by a Freedom of Information request. Each email asked that the enclosed overview of the research and link to the online questionnaire be forwarded to their school's respective headteacher and chair of governors.. The mail merge software used to distribute and track emails, reported that following an initial email and two reminder emails to each school's generic email address, 13.8% were opened and a total response rate of 2.8% was achieved.

Data collection

The process of transforming the qualitative findings into content for a cross-sectional survey and resultant online questionnaire was informed by methods described in 'instrument development' mixed methods designs (40,47–49). To ensure the final item pool accurately reflected the breadth of the qualitative findings, three researchers (EB, VH, RC) collectively reviewed each qualitative theme, agreed key findings and developed a series of closed opinions statements. All four themes were represented in the final survey content.

In addition to 9 closed questions related to participant and school demographics, the final survey included a total of 16 questions containing a series of closed opinion statements. A 5-point Likert Scale (50,51), was used to assess a participant's level of agreement with each statement posed. The survey was designed to be accessed online using Google Forms and completed in less than 15 minutes. Prior to being formally distributed, the survey was pilot tested by 12 participants from the target population.

Data analysis

The full data set was confirmed as complete and then downloaded into, managed and analysed using IBM SPSS (52). Descriptive statistics were generated i.e. frequencies and proportions, to summarise participant and school demographics and the responses received for each survey item.

Results

Study sample description

Twenty-two semi-structured face to face interviews were completed (lasting on average 49 minutes). The survey final sample size was 127 participants (excluding the 12 pilot responses), with

all completing the online questionnaire in full. The characteristics of participants and schools are shown in Table I and II respectively.

Qualitative and quantitative phase results

To provide 'an overall or negotiated account of what they mean together' (51) (pg 21) results from both study phases are presented as an integrated narrative and are collectively organised according to the four qualitative themes - 1) Perceptions of adolescent obesity and lifestyle behaviours, 2) Influence of place, 3) Shared responsibility, collective solutions, 4) Secondary school settings. Participant quotations are presented in table III.

Perceptions of adolescent obesity and lifestyle behaviours

The majority of headteachers and chairs of governors interviewed acknowledged an escalating problem of obesity within society. Despite this, adolescent obesity was broadly perceived to only be an issue for a small proportion of secondary school pupils. Similarly, the survey identified 75.6% of participants estimating that ≤20% of their secondary school pupils are overweight or obese (of which 46.5% estimating prevalence as ≤10%).

There was concern however regarding dietary behaviours in secondary school pupils. An increasing proportion of adolescents were deemed to prefer, and excessively consume, junk or fast food (66.7% survey agreement) and sugary drinks (73.2% survey agreement), particularly outside school or relating to products brought into school. Furthermore, just under two thirds of those surveyed (65.4%) deemed unhealthy dietary behaviour to be a greater issue than obesity.

A greater division of views was apparent when considering physical activity behaviours. Most participants particularly from state funded schools however affirmed that their pupils do not undertake enough physical activity and increasingly engage in sedentary activities, especially when at home.

Influence of place

Whilst identifying that obesity is caused by unhealthy dietary habits and physical inactivity, interviewees acknowledged that extensive social and environmental factors influence an adolescent's ability and desire to engage in healthy lifestyle behaviours.First proposed by

interviewees and latterly supported by survey respondents, was the view that a pupil's home environment is more influential in the prevention of obesity than a secondary school (88.2% agreement). Furthermore the role of parents was deemed critical in determining their child's lifestyle behaviours and the resultant risk of obesity.

Many, particularly from state funded schools, proposed that parents often lack the awareness, knowledge and skills required to prevent obesity in their own children. In addition, secondary school pupils were considered more likely to be obese if their parents are (82.6% agreement).
Despite this, most rejected that it is a parent's 'fault' if their child is obese (74% remained neutral or disagreed). Crucially however, the significant influence of an adolescent's home environment was deemed able to either support or undermine any effort a secondary school undertakes to improve pupils' lifestyle behaviours.

Compounding negative influences within a home environment, was the perceived increasing and concerning availability and marketing of unhealthy food and drink in society (88.2% agreement). For many, this excess was believed to expose weaknesses in adolescents' ability to make and sustain healthier choices. Interviewees representing a high FSM%, revealed significant perturbation about adolescents' ability to access junk or fast food directly near to their secondary school setting. This for some was morally reprehensible, given the belief that the food industry was prioritising profit over the health of children and young people (83.5% agreement).

The majority of headteachers and chairs of governors perceived an intractable relationship to exist between unhealthy eating and poverty (62.2% agreement). Deprivation was broadly seen as a driver influencing the overconsumption of cheaper, energy dense and nutrient poor food.

Shared responsibilities, collective solutions

During interviews, participants acknowledged that obesity particularly in adulthood is associated with a significant health and financial burden to both individuals and society. Consequently, across both study phases, most supported the notion that 'society as a whole' was responsible for preventing obesity (86.6% agreement). Despite this, interviewees deemed parents to have the primary responsibility for obesity prevention and their children's lifestyle behaviours. This was especially relevant for those who perceived an increasing social and political emphasis on the importance of personal autonomy.

Survey respondents agreed that parents (99.2% agreement), secondary school pupils themselves (97.6% agreement), the food industry (92.9% agreement), primary schools (82.7% agreement), secondary schools (80.3% agreement) and the government (79% agreement) were responsible for preventing adolescent obesity.

Secondary schools were argued to have a clear role in obesity prevention, however interviewees felt that parents and the government often hold disproportionate expectations about a school's actual responsibility for preventative action.
Regardless of the attribution of responsibility, interviewees supported a diverse range of approaches to prevent obesity, notably at an individual, school, family and community level.

Firstly, participants in each study phase, placed significant emphasis on providing adolescents with opportunities to be active (98.4% agreement) and develop healthy eating habits (96.8% agreement). Examples of which included the provision of sport and physical activity projects, cookery workshops and family lifestyle behaviour programmes. Secondly, delivering health education in schools (90.5% agreement) and the provision of national public awareness campaigns (88.9% agreement), were both deemed to be effective solutions for preventing obesity.

Greater division in views was evident, when considering the appropriateness and effectiveness of national legislation (73.2% agreement) and taxation (66.2% agreement) to influence adolescent lifestyle behaviour. In relation to the latter, interviewees made frequent references to the 'sugar tax'. Many proposed its introduction as positive step towards firmer preventative action. Others however, argued that utilising legislation and taxation to 'control behaviour', interferes with individual democratic freedoms.

Regardless of the solution discussed, participants consistently argued that in order for prevention to be effective, the adoption and development of healthy lifestyle behaviours should start early in a child's life. Furthermore, the concept of building partnerships between public sector organisations was proposed as crucial for ensuring preventative action is effective and sustainable across the life course.

In particular, the role and engagement of three key partners were consistently championed for facilitating prevention within and outside of the school setting, namely school nurses (92.1% agreement), local authority public health (90.5% agreement) and the Department of Health and Social Care (87.4% agreement). Despite this, the current ability for these partnerships to be impactful was viewed as being hindered by reducing capacity, disparate priorities and substantial funding pressures across 'the system'.

Secondary school settings

Participants across both phases affirmed that secondary schools are an important setting for preventing obesity in adolescence (78% agreement). Furthermore, support was identified for the NICE statement that "headteachers and chairs of governors should ensure that the ethos of all school policies help children and young people to maintain a healthy weight, eat a healthy diet and be physically active" (89.9% agreement).

Although advocating for earlier intervention, most proposed that improving adolescent dietary and physical activity habits are secondary school priorities (73.2% and 69.3% agreement respectively). In contrast, only a minority deemed obesity prevention to be an explicit school priority (37% agreement), with only 7.9% of survey respondents confirming their school had a specific policy for preventative action.

Despite this, across both study phases, participants identified various action and activity within their respective setting, which may contribute to the obesity prevention agenda. This included the provision of extra-curricular physical activity opportunities (96% agreement), healthy lifestyle education in the curriculum (91.3% agreement) and healthy catering options (92.9% agreement). The desire to improve the lifestyle behaviours of adolescents appeared to be driven by a recognition of the reciprocal relationship between health and academic performance and a commitment to the development of the 'whole' child.

Headteachers and chairs of governors reported a range of barriers deemed to inhibit their school's ability or desire to contribute to obesity prevention. For state funded schools increasing financial pressures and a disproportionate governmental focus on academic achievement (59.8% agreement) meant for most that anything on the 'fringe' of a school's core purpose was not able to prioritised wholeheartedly.

The concept of role-modelling by staff was an additional and broadly contentious issue, deemed to influence whether and how obesity prevention is embedded into secondary schools. Participants advocated that within the school setting school staff should role model healthy lifestyles (81.9% agreement). A commonly shared yet divisive perception, was that the credibility of messages cascaded to adolescents about healthy lifestyles, could be negatively affected if delivered by a member of staff who is overweight or obese. Despite these concerns, it was viewed that addressing or even discussing an employee's lifestyle behaviours and weight status are outside of the remit of the school employer.

In attempting to overcome barriers to preventative action, some headteachers in particular referenced the importance of their own values, beliefs and leadership in developing a culture that prioritised pupil health and lifestyle behaviours. However most interviewees felt that to meaningfully facilitate the prevention of obesity in secondary school settings, extra resources from government for both schools and key external partners, as well as national guidelines on whole-school approaches to obesity prevention were required. Furthermore, given the perception that the causes of and responsibility for obesity lay primarily outside of schools, strong emphasis was placed on the importance of public health action across a variety of settings (e.g. family and community).

Discussion

Main findings of the study

This study found that secondary school leaders generally believe obesity to be an issue for only a small proportion of their pupils. However, substantial concern was reported about unhealthy dietary habits and sedentary behaviour during adolescence. They viewed the causes of adolescent obesity to be complex with multiple social and environmental factors proposed as influencing an adolescent's ability and desire to achieve and maintain a healthy weight. A variety of stakeholders were deemed to have responsibility for preventing obesity in adolescence, with strong emphasis placed on the role of parents.

We found that although preventing obesity is not an explicit priority for most secondary schools, headteachers and chairs of governors are strongly committed to improving adolescent dietary and

physical activity habits. In addition, we identified activity occurring within secondary school settings, which contributed to the prevention agenda.

Nevertheless, increasing academic pressures and reducing budgets meant secondary school leaders, particularly in state funded schools, felt unable to undertake purposeful and sustainable action towards preventing adolescent obesity. Moreover, the contentious issue of staff role-modelling and a perceived diminishing capacity of key stakeholders across the system also presented substantial barriers.

What is already known on this topic

The importance of schools in obesity prevention remain a focal point in research literature and national guidelines (20,22,25,28). In their respective settings, headteachers and chairs of governors arguably play the most decisive role in determining a school's engagement in obesity prevention and public health action more broadly (36–38,53–55). A fact reflected in the NICE pathway for obesity prevention, where the role and responsibilities of headteachers and chairs of governors are explicitly referenced (22).

Only a small body of evidence has exclusively investigated headteachers perspectives on childhood obesity (38,39). This research identified an extensive range of barriers and facilitators for preventing childhood obesity, which were deemed to operate both internally within the primary school setting and externally, reflecting the role of parents, communities and wider society. Importantly, within these samples the topic of adolescent obesity was unexplored and it remains that the voices of secondary school headteachers and chairs of governors on this topic remain unexplored and unrepresented. This study provides completementary

What this study adds

To our knowledge this is the first study, either nationally or internationally, to report exclusively on the perspectives of the overarching decision makers for obesity prevention within secondary school settings. Findings derived from our mixed methods approach, therefore provide a valuable empirical contribution and present important implications for policy-makers and public health professionals currently engaged in the obesity agenda.

Significantly, despite national evidence to the contrary (2) we found that the vast majority of headteachers and chairs of governors, representing over 140 secondary schools in England, may underestimate the pervasiveness of obesity in their setting. A comparable disparity evidenced with primary school headteachers (38), could be theoretically attributed to the societal normalisation of excess weight (56,57) and the contested language associated with obesity (58,59). Crucially, this finding adds further weight to the argument that the scale of the problem needs to be recognised by key stakeholders before it can be meaningfully prioritised (60).

Despite this we found clear examples of secondary schools delivering activity, which contributes to the prevention of obesity and reflects principles contained in 'Health Promoting School's framework' (23,24,28,61). We weren't however able to evidence a universal and systematic adoption of a 'whole school approach' to addressing this significant public health issue (24,62). Reasons for which, appeared rooted in a complex range of barriers, both internal and external to secondary school settings. Given the financial and capacity pressures facing schools (63), it is perhaps unsurprising that in order to meaningfully prevent obesity, school leaders strongly advocated for additional resources and the development of sustainable public sector partnerships across the system.

Importantly, this study clearly evidenced that headteachers and chairs of governors recognise the existence of an 'obesogenic environment' (5–7,17,20,64,65). Furthermore and reflecting the complex obesity discourse (14,66) were the polarised beliefs about a) who is responsible for obesity and b) how best to resolve the problem.

In spite of this, headteachers and chairs of governors were resolute that the greatest influences on child and adolescent lifestyle behaviours lie outside of a school setting. Therefore whilst meaningful engagement remains crucial and appeared to be welcomed, secondary schools may not be able or indeed willing to reduce the risks of obesity posed by other settings (19,27). To address this, policy makers and public health professionals should prioritise a whole systems approach (7), which reflects the 'intervention ladder' (67) and ensures all settings where adolescents develop and live, make a vital contribution to obesity prevention (5).

Limitations

The inability to directly invite eligible participants, meant that recruitment to the study was challenging. This was especially relevant for the quantitative phase, where only 13.8% of invitation

emails sent to each school were opened. Based on this, we are therefore unable to verify the true coverage of the survey. A further limitation of the survey, is reflected in the use of an unvalidated measure to obtain participant perspectives. The use of non-probability sampling in the qualitative phase and the relatively small sample size obtained in the quantitative phase, means the study results may not be representative of the wider population of secondary school headteachers and chairs of governors in England. In addition, an inherent selection bias exists, as the final study sample was formed of individuals who voluntarily chose to participate.

Despite this, utilising a mixed-methods approach and sampling participants from a variety of school settings enabled us to enhance the reliability of the study and capture important views, previously unreported in the literature.

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